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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/865,146	05/24/2001	Shin Abe	P/1071-1348	2825

7590 04/30/2004  
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EXAMINER

GLENN, KIMBERLY E

ART UNIT	PAPER NUMBER
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2817

DATE MAILED: 04/30/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 09/865,146	<b>Applicant(s)</b> ABE ET AL.	
	<b>Examiner</b> Kimberly E Glenn	<b>Art Unit</b> 2817	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1) ☒ Responsive to communication(s) filed on 01 March 2004.

2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4) ☒ Claim(s) 3,4,6,8,10-12 and 22 is/are pending in the application.  
     4a) Of the above claim(s) 4 is/are withdrawn from consideration.

5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.

6) ☒ Claim(s) 3 6 8 10-12 22 is/are rejected.

7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.

8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

9) ☐ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
     a) ☒ All    b) ☐ Some \* c) ☐ None of:

1. ☒ Certified copies of the priority documents have been received.

2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.

3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.	4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____. 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) 6) <input type="checkbox"/> Other: _____.
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## DETAILED ACTION

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 3, 6 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Black US Patent 2,779,925 (of record) in view of Smith US Patent 4,376,920.

The primary reference, Black teach a composite coaxial resonator comprising a central core 11 (Columnar element), a inner conductor 12 comprised of a plurality of lamination of a conducting material 13 and insulating material (polyethylene) 14, and dielectric member 21, a outer conductor 15 comprising a plurality of lamination of a conducting material 16 and insulating material 17 and an intermediate dielectric member (non conducting element) 23 disposed between the central core 11 and the dielectric member 21. Black disclose in column 2 that the dielectric constants of the dielectric is equal to  $\epsilon_1 = \epsilon_2 (1 + W/t)$  wherein  $\epsilon_1$  is the dielectric constant of the main dielectric element between the two conductors,  $\epsilon_2$  is the dielectric constant of the insulating material between the conducting material, W is the thickness of one of the conducting material and t is the thickness of the insulating material. Solving for t or W shows that the thickness of conducting material or the thickness of the insulating material is based on the dielectric constant of the dielectric materials disposed between the conductors. Since the critical velocity of the conductors of both the inner and outer

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conductor is determined by the above equation the phase constant of the lines are substantially equal. (Column 1; line 71 through column 2; line 13, column 3; line 5 through column 4; line 48)

Thus, Black is shown to teach all the limitation of the claims with the exception of the non-conducting element being air.

Smith teach that it is well known in the art provide air between an inner and outer conductor. (column 3 lines 39-47)

One of ordinary skill in the art the time of the invention would have found it obvious to replace the intermediate dielectric member (polyethylene polystyrene) with air as taught by Smith since examiner takes notice of the equivalents of the intermediate dielectric member and air for their use in the transmission line art and the selection of any of these known equivalents to provide an isolation means would be within the level of ordinary skill in the art. The motivation for this modification would have been to provide an art recognized alternative isolation means.

Claims 8 and 10-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kobayashi et al US Patent 5,293,141 in view of Black US Patent 2,779,925 (of record) in combination with Smith US Patent 4,376,920.

Kobayashi et al disclose a diametric filter comprising a plurality of coaxial resonators 25- 27. Kobayashi et al also teaches that the dielectric filters can be using in antenna duplexer having a Tx input electrode 46k and Rx output electrode 46m. The Tx input electrode is connected to a transmitter 53 and the Rx output electrode is connected to a receiver 54. (Figures 1 and 22-29)

Kobayashi et al is shown to teach all the limitation of the claim with the exception of the coaxial resonator comprising an inner conductor formed on an outer surface of a columnar element; a dielectric element having a hole formed therein, the columnar element being disposed in the hole, an outer conductor formed on an outer surface of the dielectric element and a non-conducting element disposed between the columnar element and the dielectric elements wherein the inner conductor has a multi-layer electrode structure in which conductor layers and dielectric layers are alternately laminated, wherein a thickness of the conductor layers and a thickness of the dielectric layers are based on the non-conducting element.

Black teaches a composite coaxial resonator comprising a central core 11, an inner conductor 12 comprised of a plurality of lamination of a conducting material 13 and insulating material (polyethylene) 14, and intermediate dielectric member 23, an outer conductor 15 comprising a plurality of lamination of a conducting material 16 and insulating material 17 and another dielectric member 20 disposed between the central core and the intermediate dielectric member 23. See 35 USC 103 rejection of claims 3, 4 and 6 for details of Black reference.

One of ordinary skill in the art would have replaced the general coaxial resonator of Kobayashi et al with the coaxial resonator of Black since examiner takes notice of the equivalent of the general coaxial resonator and the coaxial resonators of Black for their use in the filter art and the selection of any of these known equivalents to provide a resonance would be within the level of ordinary skill in the art.

Thus, Kobayshi et al and Black are shown to teach all the limitation of the claims with the exception of the non-conducting element being air.

Smith teach that it is well known in the art provide air between an inner and outer conductor. (Column 3 lines 39-47)

One of ordinary skill in the art the time of the invention would have found it obvious to replace the intermediate dielectric member (polyethylene polystyrene) with air as taught by Smith since examiner takes notice of the equivalents of the intermediate dielectric member and air for their use in the transmission line art and the selection of any of these known equivalents to provide an isolation means would be within the level of ordinary skill in the art. The motivation for this modification would have been to provide an art recognized alternative isolation means.

### ***Double Patenting***

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 3, 6, 8, 10-12 and 22 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-12 of U.S.

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Patent No. 655611 in view of Black '925 in further view of Smith '920. The instant claims are same except the inner conductor is disposed on a columnar element and the non-conducting element being air. Black discloses a coaxial resonator having an inner conductor provided on an outer surface of a columnar element and disposed in a dielectric element hole. It would have been obvious to one of ordinary skill in the art to provide the inner conductor on a columnar element and disposed in a dielectric element hole in the device of patented claims for easy assembling.

Smith disclose that it is well known in the art provide air between an inner and outer conductor. One of ordinary skill in the art the time of the invention would have found it obvious to replace the dielectric member with air as taught by Smith since examiner takes notice of the equivalents of the dielectric member and air for their use in the transmission line art and the selection of any of these known equivalents to provide an isolation means would be within the level of ordinary skill in the art.

### ***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

Aberasturi US Patent 5,898,350, Barlow US Patent 3,668,574, Fukasawa et al US Patent 4,255,729, Kach US Patent 4,318,064 and Van Helvoort et al US Patent 6,670,863.

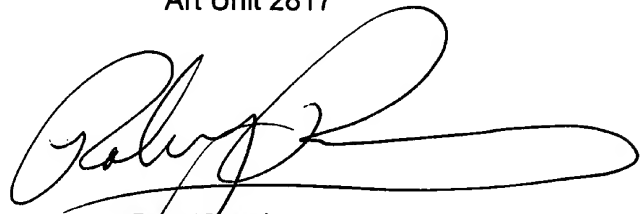
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kimberly E Glenn whose telephone number is (571)-272-1761. The examiner can normally be reached on Monday-Friday 7:30 to 4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Pascal can be reached on (571)-272-1769. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Kimberly E Glenn  
Examiner  
Art Unit 2817

keg



Robert Pascal  
Supervisory Patent Examiner  
Technology Center 2800